18. The isolated protein of claim 17, comprising amino acids 2 to 311 in SEQ ID NO:4.

19. The isolated protein of claim 17, wherein said amino acid sequence is at least 95% identical to amino acids 1 to 311 in SEQ ID NO:4;

wherein % identity is determined using the Bestfit program with parameters that calculate % identity over the full length of amino acids 1 to 311 in SEQ ID NO:4 and that allow gaps of up to 5% of the total number of residues in amino acids 1 to 311 in SEQ ID NO:4.

20. The isolated protein of claim 19, comprising amino acids 1 to 311 in SEQ ID NO:4.

21. The isolated protein of claim 17, which is produced by a recombinant host cell.

22. The isolated protein of claim 17, which comprises a heterologous polypeptide.

23. A composition comprising the isolated protein of claim 17 and a pharmaceutically acceptable carrier.

24. An isolated antibody which binds specifically to the protein of claim 17.

25. A method of detecting a galectin 9 protein in a sample, comprising:

(a) contacting said sample with an antibody according to claim 24, under conditions such that immunocomplexes form, and

(b) detecting the presence of said antibody bound to said protein.

A2 CONT. C

26. A method of treating a disorder in a mammal, comprising administering a therapeutically effective amount of the protein of claim 17 90 to said mammal.

27. The method of claim 26, wherein said disorder is selected from the group consisting of cancer, autoimmune diseases, inflammatory diseases, asthma, and allergic diseases.

28. An isolated protein comprising an amino acid sequence at least 95% identical to the mature amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97733;

wherein % identity is determined using the Bestfit program with parameters that calculate % identity over the full length of the mature amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97733 and that allow gaps of up to 5% of the total number in the mature amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97733.

29. The isolated protein of claim 28, comprising the mature amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97733.

30. The isolated protein of claim 28, wherein said amino acid sequence is at least 95% identical to the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97733;

wherein % identity is determined using the Bestfit program with parameters that calculate % identity over the full length of the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97733 and that allow gaps of up to 5% of the total number in the

complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97733.

A2 cont'd.

31. The isolated protein of claim 30, comprising the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97733.

32. The isolated protein of claim 28, which is produced by a recombinant host cell.

33. The isolated protein of claim 28, which comprises a heterologous polypeptide.

34. A composition comprising the isolated protein of claim 28 and a pharmaceutically acceptable carrier.

35. An isolated antibody which binds specifically to the protein of claim 28.

36. A method of detecting a galectin 9 protein in a sample, comprising:

(a) contacting said sample with an antibody according to claim 35, under conditions such that immunocomplexes form, and

(b) detecting the presence of said antibody bound to said protein.

37. An isolated protein comprising an amino acid sequence selected from the group consisting of:

(a) amino acids 62 to 102 in SEQ ID NO:4;

(b) amino acids 226 to 259 in SEQ ID NO:4; and

(c) amino acids 197 to 308 in SEQ ID NO:4.

A2, cont'd.

38. The isolated protein of claim 37, wherein said amino acid sequence is (a).

39. The isolated protein of claim 37, wherein said amino acid sequence is (b).

40. The isolated protein of claim 37, wherein said amino acid sequence is (c).

41. The isolated protein of claim 37, which is produced by a recombinant host cell.

42. The isolated protein of claim 37, which comprises a heterologous polypeptide.

43. A composition comprising the isolated protein of claim 37 and a pharmaceutically acceptable carrier.

44. An isolated antibody which binds specifically to the protein of claim 37.

45. A method of detecting a galectin 9 protein in a sample, comprising:

(a) contacting said sample with an antibody according to claim 44, under conditions such that immunocomplexes form, and

(b) detecting the presence of said antibody bound to said protein.

46. An isolated protein comprising 15 contiguous amino acids of SEQ ID NO:4.

47. The isolated protein of claim 46 comprising 30 contiguous amino acids of SEQ ID NO:4.

48. The isolated protein of claim 47 comprising 50 contiguous amino acids of SEQ ID NO:4.

49. The isolated protein of claim 46, which is produced by a recombinant host cell.

50. The isolated protein of claim 46, which comprises a heterologous polypeptide.

51. A composition comprising the isolated protein of claim 46 and a pharmaceutically acceptable carrier.

52. An isolated antibody which binds specifically to the protein of claim 46.

53. A method of detecting a galectin 9 protein in a sample, comprising:

(a) contacting said sample with an antibody according to claim 52, under conditions such that immunocomplexes form, and

(b) detecting the presence of said antibody bound to said protein.

54. An isolated protein comprising a fragment of the amino acid sequence of SEQ ID NO:4;

wherein said protein has an activity selected from the group consisting of:

(a) lactose binding activity; and

(b) binding activity for an antibody having specificity for a polypeptide consisting of the complete amino acid sequence of SEQ ID NO:4.

A2 CONT'D

55. The isolated protein of claim 54 which has lactose binding activity.

56. The isolated protein of claim 54, wherein said protein has binding activity for an antibody having specificity for a polypeptide consisting of the complete amino acid sequence of SEQ ID NO:4.

57. The isolated protein of claim 54, which is produced by a recombinant host cell.

58. The isolated protein of claim 54, which comprises a heterologous polypeptide.

59. A composition comprising the isolated protein of claim 54 and a pharmaceutically acceptable carrier.

60. An isolated antibody which binds specifically to the protein of claim 54.

61. A method of detecting a galectin 9 protein in a sample, comprising:

(a) contacting said sample with an antibody according to claim 60, under conditions such that immunocomplexes form, and

(b) detecting the presence of said antibody bound to said protein.

62. An isolated protein comprising amino acid residues encoded by a first polynucleotide which hybridizes to a second polynucleotide having the nucleotide sequence of the coding region of SEQ ID NO:3, or the complement thereof, under the following conditions:

(a) incubating overnight at 42°C in a solution consisting of 50% formamide, 5x SSC, 50 mM sodium phosphate (pH 7.6), 5x Denhardt's solution, 10% dextran sulfate, and 20 μg/ml denatured, sheared salmon sperm DNA; and

(b) washing at 65°C in a solution consisting of 0.1x SSC;

wherein said first polynucleotide encodes a protein having a biological activity selected from the group consisting of:

(a) lactose binding activity; and

(b) binding activity for an antibody having specificity for a polypeptide consisting of the complete amino acid sequence of SEQ ID NO:4.

63. The isolated protein of claim 62 which has lactose binding activity.

64. The isolated protein of claim 62, wherein said protein has binding activity for an antibody having specificity for a polypeptide consisting of the complete amino acid sequence of SEQ ID NO:4.

65. The isolated protein of claim 62, which is produced by a recombinant host cell.

66. The isolated protein of claim 62, which comprises a heterologous polypeptide.

67. A composition comprising the isolated protein of claim 62 and a pharmaceutically acceptable carrier.

68. An isolated antibody which binds specifically to the protein of claim 62.

69. A method of detecting a galectin 9 protein in a sample, comprising:

(a) contacting said sample with an antibody according to claim 68, under conditions such that immunocomplexes form, and

(b) detecting the presence of said antibody bound to said protein.

70. An isolated protein comprising an amino acid sequence at least 95% identical to amino acids 2 to 200 in SEQ ID NO:8;

wherein % identity is determined using the Bestfit program with parameters that calculate % identity over the full length of amino acids 2 to 200 in SEQ ID NO:8 and that allow gaps of up to 5% of the total number of residues in amino acids 2 to 200 in SEQ ID NO:8.

71. The isolated protein of claim 70, comprising amino acids 2 to 200 in SEQ ID NO:8.

72. The isolated protein of claim 70, wherein said amino acid sequence is at least 95% identical to amino acids 1 to 200 in SEQ ID NO:8;

wherein % identity is determined using the Bestfit program with parameters that calculate % identity over the full length of amino acids 1 to 200 in SEQ ID NO:8 and that allow gaps of up to 5% of the total number of residues in amino acids 1 to 200 in SEQ ID NO:8.

73. The isolated protein of claim 72, comprising amino acids 1 to 200 in SEQ ID NO:8.

74. The isolated protein of claim 70, which is produced by a recombinant host cell.

75. The isolated protein of claim 70, which comprises a heterologous polypeptide.

76. A composition comprising the isolated protein of claim 70 and a pharmaceutically acceptable carrier.

77. An isolated antibody which binds specifically to the protein of claim 70.

78. A method of detecting a galectin 10 or 10SV protein in a sample, comprising:

(a) contacting said sample with an antibody according to claim 77, under conditions such that immunocomplexes form, and

(b) detecting the presence of said antibody bound to said protein.

79. A method of treating a disorder in a mammal, comprising administering a therapeutically effective amount of the protein of claim 70 to said mammal.

80. The method of claim 79, wherein said disorder is selected from the group consisting of cancer, autoimmune diseases, inflammatory diseases, asthma, and allergic diseases.

81. An isolated protein comprising an amino acid sequence at least 95% identical to the mature amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97734;

wherein % identity is determined using the Bestfit program with parameters that calculate % identity over the full length of the mature amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97734 and that allow gaps of up to 5% of the total number in the mature amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97734.

#2 CONT'D

82. The isolated protein of claim 81, comprising the mature amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97734.

83. The isolated protein of claim 81, wherein said amino acid sequence is at least 95% identical to the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97734;

wherein % identity is determined using the Bestfit program with parameters that calculate % identity over the full length of the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97734 and that allow gaps of up to 5% of the total number in the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97734.

84. The isolated protein of claim 83, comprising the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97734.

85. The isolated protein of claim 81, which is produced by a recombinant host cell.

86. The isolated protein of claim 81, which comprises a heterologous polypeptide.